PRINCE EDWARD ISLAND

ENERGY CORPORATION

ANNUAL REPORT

1983-84

BOARD OF DIRECTORS

Mr. Norman F. Stewart, Chairman
Mr. John H. Reynolds, Vice Chairman
Mr. G. Douglas Dennis, Secretary-Treasurer
Hon. Frederick L. Driscoll
Hon. J. Angus MacLean, P.C.
Mr. L. Raymond MacKinnon
Mr. Leo J. Walsh
Mr. Don Gillis

The Honourable Frederick L. Driscoll
Minister
Department of Energy & Forestry
P.O. Box 2000
Charlottetown, P.E.I.

Dear Mr. Minister:

I have the honour to present to you the attached annual report of the Prince Edward Island Energy Corporation for the year ending March 31, 1984. This report has been prepared and is submitted in accordance with the Energy Corporation Act, Section, 10 (1).

Respectfully submitted,

Norman F. Stewart
Chairman of the Board of Directors

1. INTRODUCTION

This is the fifth annual report of the P.E.I. Energy Corporation. The Energy Corporation was established by the Energy Corporation Act which was proclaimed on December 9, 1978.

The objectives of the Energy Corporation are to develop and promote energy systems on an economic and efficient basis, and to coordinate all government programs in the establishment and application of energy systems in the province.

The Corporation operates within the general framework of provincial energy policy which is the responsibility of the Minister of Energy and Forestry.

2. BOARD OF DIRECTORS

The members of the Board of Directors as of 31 March, 1984 and their term of office are as follows:

Norman F. Stewart, Chairman -- 20 October 1983 — 20 March, 1987
John H. Reynolds, Vice Chairman — 10 Nov., 1983 — 10 Nov. 1986
G. Douglas Dennis, Secretary-Treasurer — 9 Nov., 1981 — 9 Nov., 1984
Hon. J. Angus MacLean, P.C. — 21 November, 1983 — 21 November, 1986
L. Raymond MacKinnon, 20 October, 1983 — 20 October, 1986
Don Gillis, 26 March, 1981 — 26 March, 1984
Leo J. Walsh, 20 October, 1983 — 20 October, 1986
John R. DeGrace, (resigned), 9 September, 1982 — 9 September, 1985
C. Kirk Brown (term expired), 5 October, 1980 — 5 October, 1983
Bruce McCallum (resigned), 18 September, 1980 — 7 September, 1983
Hon. Frederick L. Driscoll (Ex Officio) 28 October, 1982

3. STAFF

The staff of the Energy Corporation consists of three full time positions, unchanged from last year. The policy of the Corporation is to contract services from the private sector rather than to increase staff.

4. ACTIVITIES

With the successful commissioning of the Charlottetown Area Garbage Incinerator and the Kings County Memorial Hospital wood fueled heating system, the Corporation directed its attention to implementing a program of displacing oil-fired heating units in public buildings with units utilizing whole tree chips. Among the buildings which were identified as potential candidates were the old P.E.I. Hospital, Montague Junior High School, and the new Senior Citizens unit for Summerside. In addition, the Corporation has initiated a study to determine the feasibility of cogeneration at Cavendish Farms in New Annan and the Energy from Waste Plant in Parkdale. Additional details on these activities and projects follow.

4.1 Charlottetown Area Garbage Incinerator (Energy from Waste Plant)

The performance test as required in the contract between Tricil Limited and the P.E.I. Energy Corporation was conducted during the period March 14-21, 1983. The performance test called for seven days operation at full or designated load and all the performance criteria were met. On April 12, 1983, the plant was accepted by the Energy Corporation and the start of Tricil Limited's 5-year operating contract commenced as of that date.

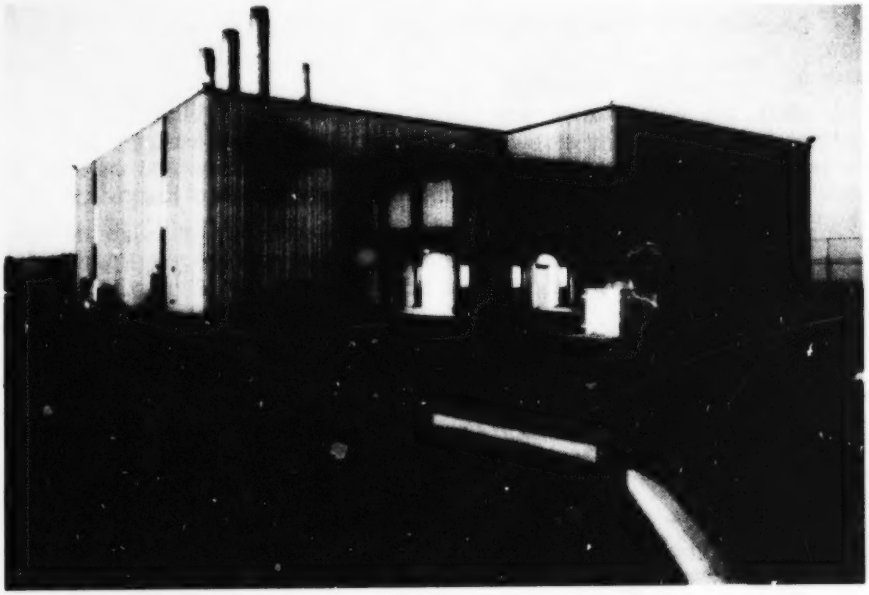
The official opening of the plant took place on June 17, 1983 with the Hon. Jean Chretien, Minister of Energy, Mines & Resources Canada, Premier Jim M. Lee, the Hon. Frederick L. Driscoll and the Hon. Bennett Campbell participating.

It is a pleasure to report that, at the end of the first complete year of operation, the P.E.I. Energy from Waste Plant has met or exceeded all of its objectives. Landfill use has been reduced by more than 26,000 tons a year. The feasibility of resource recovery has been clearly demonstrated by the delivery of 32 million lbs. of steam to the hospital complex (target was 80 million lbs. of steam) and by the displacement of 760,000 gals. of No. 2 fuel oil.

The construction phase was completed slightly behind schedule but within budget. During the first full year of operation, operating costs were 14% ($101,000) below budget and the plant operated with an availability of approximately 97%.

During April of 1983 an emission testing program was conducted by Environment Canada for particulates, gaseous hydrogen chloride, and selected heavy metals. The complete report on this sampling program is available to any interested party on request to the Energy Corporation. Based on provincial standards, the particulate emission was approximately 25% of standard and the hydrogen chloride emission 50%. The opacity of the stack emissions is monitored and continuously recorded. Opacity normally runs between 1% and 5%. However, during periods when sawdust and wood chips are being used to supplement the waste fuel, the opacity increases to between 5% and 10%. The emission, even at 10%, is not visible except during cold weather when moisture in the stack gases condenses producing a white steam plume which dissipates rapidly.

In anticipation of cogeneration being provided at the Energy from Waste Plant, the boiler selected was designed to operate at 600 psi, whereas the current operating pressure is 300 psi. Considering that electricity represents approximately one-sixth of the annual operating costs, the Board of Directors authorized a study to be conducted to determine the potential of co-generation of electricity at the Energy from Waste Plant. The report has been received from the Consulting Engineer and is currently under review. A steam turbine capable of providing all the electrical requirements at the Energy from Waste Plant plus a small surplus for sale to Maritime Electric Company would cost about $560,000. The Corporation is now investigating the eligibility of the project under the Forest Industry Renewable Energy Program (FIRE) of Energy, Mines and Resources Canada.



In February of 1984, Environment Canada requested the Corporation to cooperate in allowing the facility to be tested under a National Incinerator Testing and Evaluation Program (NITEP). The purpose of the program is to demonstrate that facilities such as the Energy from Waste Plant can be operated in an environmentally and economically acceptable manner. It is expected that this program will demonstrate that this type of energy from waste facility is:

— an efficient method of waste disposal and energy recovery
— economically viable
— not imposing a health hazard
— not polluting the environment

The Corporation has agreed to participate in the program.

An Operating Committee, consisting of two Board Members, the General Manager, and the Plant Manager, was appointed to supervise plant operations and to deal with any operating problems which might be encountered. The Operating Committee reports regularly to the Board of Directors.

4.2 Kings County Memorial Hospital wood-fueled heating system

On completion of the two-year evaluation, monitoring and testing program, ownership of this facility was turned over to the Hospital on 31 March, 1984. During the fall of 1983, and utilizing funding from the Comprehensive Development Plan, a metal roof was provided over the chip storage bin. The experience over the past two years indicated that open storage resulted in a

major increase in the moisture content of the wood chips, and therefore a cover for the bin was considered desirable. The Corporation was reimbursed by the Hospital for the provincial dollars which were expended on the project.

4.3 Renewable Energy Initiatives Program

This program, which was initiated in 1982, was extended to the fiscal year 1983-84. Projects which received financial assistance under this program were:

- Bunbury-Southport Pollution Control Centre — Wind Turbine Demonstration
- La Coopérative Forestière Ltée — District Wood Fuel Supply
- Wood-fired Tobacco Curing Facility — Phillip Curley
- Preliminary Investigation Jet Ice Project — Sherwood Sportsplex

Under-expenditures in the allocated funds occurred during the current fiscal year due to offers for financial assistance being made but not accepted by the individuals. As well La Coopérative Forestière Ltée project was to be in operation by the spring of 1984. However, due to delay in selection of equipment, the project will not be operational until the heating season of 1984-85 and grant funds are only provided on work which has actually been completed.

4.4 Farm Energy Conservation and Energy Alternative Demonstration Project

The P.E.I. Energy Corporation, in cooperation with the Department of Agriculture and DRIE, continued to fund a program to research and demonstrate systems and methods to save energy and substitute conventional energy forms used on P.E.I. farms. Twenty-one projects were initiated at a cost of $111,000. With the termination of the Comprehensive Development Plan in March of 1984, funding for the continuation of this program will become the responsibility of the Department of Agriculture.

4.5 Demonstration of Intermediate-size Wood Chip Burning Unit

In July of 1983, a contract was awarded to Fitzgerald and Snow Ltd. for the construction of a wood-chip burning unit for the Montague Junior High School. This unit is now in operation and minor modifications are required to the wood fuel system in order to ensure automatic and satisfactory operation.

Under the Comprehensive Development Plan, funding was approved for the installation of a 40 H.P. wood chip unit for the Sleepy Hollow Correctional Centre. The Department of Transportation and Public Works have also approved the installation of a 30 H. P. wood chip fired unit as part of the new Summerside Manor project.

4.6 Energy, Monitoring and Management System for Schools

As a joint project of the P.E.I. Energy Corporation and the Department of Education, Enerplan Consultants Ltd., of Moncton, N.B., was retained to conduct a detailed study aimed at establishing a retrofit and monitoring program for a 10-School demonstration project. This report was received in the fall of 1983 and the Department of Education included capital funding for retrofit in their 1984-85 budget.

4.7 P.E.I. Hospital Conversion to Wood Fuel

A more complete detailed review of the wood fired option for the P.E.I. Hospital was held in abeyance by the Energy Corporation pending a decision by government with regards to the future use of the building. A decision as to the use of the building was made by government in August of 1983 and a comprehensive engineering study was then carried out. This study confirmed the financial viability of installing a wood fired unit at the P.E.I. Hospital with a hot water line being constructed to the Provincial Administration Building to provide the heat requirements of that complex. The estimated capital cost of the project is $1.1 million and financial approval is currently being sought from Executive Council. The Corporation is also investigating the sources of federal grant funding towards the project.

5. PROJECTS UNDER DEVELOPMENT

5.1 District Heating Study Proposal

The Corporation has been unsuccessful in obtaining funding from the Conservation and Renewable Energy Demonstration Program of Energy, Mines & Resources Canada for a District Heating Study. Currently the project is being considered for funding under the Energy Subagreement of the Canada/Prince Edward Island Economic Regional Development Agreement which is under negotiation.

5.2 Mt. Pleasant Wind Farm

While this demonstration project is considered to have National significance, the Corporation was unable to obtain joint funding from the Federal Government and the other provinces. We have been advised that projects such a wind farm would be eligible for funding under the new Enerdemo Canada program, but details of the program have yet to be released.

The Mt. Pleasant Airport has been leased to a private aircraft club, so that if the project proceeds in the future, the Corporation will have to evaluate alternate sites.

5.3 Energy Subagreement, Economic Regional Development Agreement

Negotiations are currently in progress between Canada and Prince Edward Island to promote an increased use of energy sources indigenous to Prince Edward Island, which will help alleviate the high cost of energy on P.E.I. and stimulate local investment and employment. A major portion of the funding will be applied to greater utilization of biomass. The Subagreement is currently in the final stages of negotiation and it is anticipated that it will be signed in June of 1984.

5.4 Wood Chipper Rental Program

With the expiration of the Canada-P.E.I. Renewable Energy Agreement, the Department of Energy and Forestry became the owner of two wood chippers which were provided as part of the Residential Wood Chip Demonstration Program. There are approximately 20 wood chip burning units installed in the residential sector and there are no wood chippers available from local rental agencies in order to meet the requirements of these users. At the request of the Department of Energy & Forestry, the Energy Corporation accepted ownership of the chippers and agreed to maintain a program where they would be made available on a rental basis to individuals. In addition, the Carthage chipper owned by the Department of Transportation and Public Works was turned over to the Corporation for leasing on a rental basis to companies and individuals.

The corporation is currently negotiating a contract with an individual who will be responsible for the maintenance and issuing of the chippers. A rate schedule is also being developed for approval by the Board of Directors.

5.5 CFB Summerside Fluidized Bed Heating System

The Corporation, in cooperation with the Department of Energy & Forestry, is pursuing with the Department of National Defence the feasibility of displacing 25% of the coal requirement for its fluidized bed heating system with wood chips. The equipment has been designed to accommodate chips and what is being pursued is a demonstration program to test the efficiency of burning wood chips in conjunction with coal. Indications are that the demonstration program will be conducted by Energy, Mines and Resources in the fall of 1984.

6. STUDIES IN PROGRESS

6.1 Cogeneration — Cavendish Farms

Considering the high steam and electrical demand required for processing at Cavendish Farms, in April of 1983, the Corporation conducted a preliminary review of the technical and economic viability of a wood fueled system to meet the heating and electrical requirements of Cavendish Farms. The results appeared to be very favourable and the Corporation was requested by Executive Council to retain a Consulting Engineer to carry out a more comprehensive study of the cogeneration potential at Cavendish Farms.

The final report was received by the Corporation in February of 1984 and the various alternatives identified are now being reviewed by a Technical Committee of the Corporation.

6.2 Biogas Production — Cavendish Farms

As a joint project of the P.E.I. Energy Corporation and the Department of Community and Cultural Affairs, Pickard-ADI Limited of Charlottetown, P.E.I. were retained to prepare a report on anaerobic waste water treatment

and biogas production at the Cavendish Farms processing plant. The study was prompted by the fact that the existing waste treatment facility at the plant was of inadequate capacity to provide necessary treatment. By augmenting the existing treatment facility with anaerobic treatment, biogas in the form of methane would be recovered and this gas would be burned in an engine to generate electricity. Electricity produced would be utilized in the treatment process with surplus electricity being provided to meet a portion of Cavendish Farms' electrical requirements.

The necessary field investigation was carried out during the fall of 1983 and the report on the project is to be completed by April of 1984.

6.3 Comprehensive Audit Report — Auditor General's office

The Corporation has been advised that the Auditor General proposes to carry out a comprehensive audit report on the activities of the Energy Corporation.

Details regarding the mandate and objectives of the Corporation as well as activities and projects have been made available to the Auditor General's office and it is anticipated that the report will be completed during the early summer of 1984.

7. FINANCIAL STATEMENT

The financial statement prepared by our duly appointed Auditors follows:

July 5, 1984

AUDITORS' REPORT TO THE DIRECTORS

We have examined the balance sheet of Prince Edward Island Energy Corporation as at March 31, 1984 and the statements of revenues, expenditures and surplus — operating and capital for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the company as at March 31, 1984 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Coopers & Lybrand
Chartered Accountants

PRINCE EDWARD ISLAND ENERGY CORPORATION
BALANCE SHEET AS AT MARCH 31, 1984

ASSETS

	1984 $	1983 $
CURRENT ASSETS		
Cash	327,098	44,075
Term deposits	32,892	30,000
Accounts receivable	309,928	1,149,201
Accrued interest receivable	1,619	2,602
	671,537	1,225,878
FIXED ASSETS — at cost (note 1)	10,174,840	10,215,225
	10,846,377	11,441,103

LIABILITIES

CURRENT LIABILITIES		
Accounts payable and accrued liabilities	589,768	153,594
Holdback payable	—	882,560
Bank loan	—	3,911,155
	589,768	4,947,309
LONG-TERM DEBT		
12% debenture payable interest only to 1993 with principal and interest payments commencing in 1993 to amortize the balance	5,500,000	1,500,000
	6,089,768	6,447,309
OPERATING	285,476	266,446
CAPITAL (note 2)	4,471,133	4,727,348
	4,756,609	4,993,794
	10,846,377	11,441,103

SIGNED ON BEHALF OF THE BOARD

Director

Director

PRINCE EDWARD ISLAND ENERGY CORPORATION
STATEMENT OF REVENUES AND EXPENDITURES
— OPERATING AND SURPLUS
FOR THE YEAR ENDED MARCH 31, 1984

	1984 $	1983 $
REVENUES		
Grants		
Province of Prince Edward Island (note 3)	751,192	532,575
Federal Departments	30,029	32,618
Kings County Memorial Hospital — steam sales	84,559	80,454
— equipment	73,800	5,342
	939,580	650,989
EXPENDITURES		
Projects — (Schedule)	626,770	320,839
Administration		
Consulting	138,851	123,388
Office furniture	707	1,177
Directors' honorarium	8,290	8,214
Travel	12,354	13,364
Office supplies	368	923
Miscellaneous	2,538	630
Telephone	3,893	4,061
Wages and levies	121,014	108,504
Audit	4,200	3,700
Materials and supplies	1,565	5,015
	293,780	268,976
TOTAL EXPENDITURES	920,550	589,815
EXCESS REVENUES FOR THE YEAR	19,030	61,174
SURPLUS — BEGINNING OF YEAR	266,446	205,272
SURPLUS — END OF YEAR	285,476	266,446

PRINCE EDWARD ISLAND ENERGY CORPORATION
STATEMENT OF REVENUES AND EXPENDITURES
— CAPITAL AND SURPLUS
FOR THE YEAR ENDED MARCH 31, 1984

	1984 $	1983 $
REVENUES		
— Province of Prince Edward Island	—	70,495
— Federal Department of Energy, Mines and Resources	—	3,269,500
— Sale of steam	1,172,635	111,473
— Interest	13,629	3,987
	1,186,264	3,455,455
EXPENDITURES		
— Energy from waste plant operations		
Interest	643,958	
Property taxes	65,870	—
Operations	610,216	70,495
Management	81,100	—
Fuel	31,104	—
Professional services and plant start up costs	10,231	—
	1,442,479	70,495
NET REVENUE (EXPENDITURES) FOR THE YEAR	(256,215)	3,384,960
SURPLUS — BEGINNING OF YEAR	4,727,348	1,342,388
SURPLUS — END OF YEAR	4,471,133	4,727,348

PRINCE EDWARD ISLAND ENERGY CORPORATION
NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED MARCH 31, 1984

1. ACCOUNTING POLICY

Fixed Assets

Minor fixed assets are recorded as a cumulative figure which is retired out of grants and revenues and expensed in the statement of revenues and expenditures during the period in which the transaction occurs.

Major fixed assets remaining the property of the Prince Edward Island Energy Corporation are transferred to the fixed asset account from projects under development when such projects are complete and all funds have been received.

The corporation has adopted the policy of depreciating the energy from waste plant in accordance with principal payments on long-term debt. Since the debt is not scheduled to be reduced until 1993 the depreciation of the energy from waste plant will not commence until that time.

The above policy of depreciation is a change from the previous years policy of intending to depreciate over its useful life.

	Cost $
Energy from waste plant	10,174,840
Furniture and fixtures	1,177
	10,176,017
Less: Retirements out of grants	1,177
	10,174,840

2. CAPITAL SURPLUS

The corporation has adopted the policy of capitalizing those funds received in financial support of the Waste Burning Plant. The surplus will be amortized to income in accordance with the depreciation policy.

3. GRANTS

The corporation received $824,992 from the Province of Prince Edward Island by way of a grant. The corporation returned to the Province the $73,800 received on sale of equipment from the Kings County Hospital, leaving a net grant of $751,192.

PRINCE EDWARD ISLAND ENERGY CORPORATION
SCHEDULE OF PROJECT COSTS
FOR THE YEAR ENDED MARCH 31, 1984

	1984 $	1983 $
Montague hospital wood chip burning unit		
— capital	—	61,390
— operations	90,662	70,253
— monitoring and evaluation	—	40,773
Electrical supply demand study	—	7,683
Wood blocking and splitting program	—	4,027
Ethanol Plant	11,000	766
Agricultural energy conservation	110,899	31,977
Renewable energy initiatives	187,340	95,472
Montague Junior High School — wood chip burning unit	5,610	5,040
Sale of equipment	—	3,458
P.E.I. Hospital wood study	19,058	—
Wood fuel use survey	1,480	—
District wood chip study	7,093	—
Kings County Hospital roof for chip storage bin	27,958	—
Vehicle emission testing	4,945	—
Montague Jr. High wood chip installation	160,725	—
	626,770	320,839

8. ACKNOWLEDGEMENT

The Corporation acknowledges with thanks the contributions made by individuals and organizations within the federal and provincial governments and the private sector which have contributed substantially to activities of the Corporation. Without these donated contributions of expertise, criticism and advice the Corporation's activities would have been seriously impaired.